

I claim:

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- Sub 217
1. A method of designing a golf club, comprising the steps of:
 - determining a design loft of the club;
 - tailoring a lean angle of the club based upon such determination and upon a swing characteristic of a golfer.
 2. The method of claim 1, further comprising the step of selecting at least one of a lie, a length and an offset for the club and tailoring the lean angle based, at least in part, upon such selection.
 3. The method of claim 2, wherein the swing characteristic is at least one of:
 - (i) a location of the hands of the golfer upon impact of the club with a golf ball;
 - (ii) an effective loft of the club;
 - (iii) a relative difference between the design loft and an effective loft of the club;
 - (iv) a location of the golf ball in the stance of the golfer when the golfer addresses a golf ball;
 - (v) a location of the hands of the golfer when the golfer addresses a golf ball; and
 - (vi) a location of the hands of the golfer with respect to a location of a golf ball in the stance of the golfer when the golfer addresses a golf ball.
 4. The method of claim 3, further comprising the step of determining the swing characteristic of the golfer as the golfer swings the club by using a trained observer.
 5. The method of claim 3, further comprising the step of determining the swing characteristic of the golfer as the golfer swings the club by using an automated observing system.
 6. The method of claim 5, wherein the automated observing system includes an image forming device coupled to an image display for observing the golfer swinging the golf club.

1 7. The method of claim 6, wherein the automated observing system includes a slow-motion
2 capability to analyze the swing characteristic of the golfer swinging the golf club.

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4 8. The method of claim 5, wherein the swing characteristic is the effective loft of the club
5 and the determination step includes determining the effective loft based upon a trajectory of the
6 golf ball struck by the golf club.

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8 Sub 927 9. The method of claim 2, wherein the selecting step and the tailoring step are repeated for a
9 plurality of golf clubs.

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11 10. The method of claim 9, wherein the tailoring step includes the step of correlating the
12 location of the golf ball in the stance of the golfer when the golfer addresses a golf ball across
13 the plurality of clubs.

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15 11. The method of claim 10, wherein the correlating step includes locating the golf ball
16 progressively forward in the golfer's stance, away from the target, for increasingly longer clubs
17 in the plurality of clubs.

18 Sub 927 12. The method of claim 10, wherein the correlating step includes locating the golf ball
19 progressively backward in the golfer's stance, away from the target, for increasingly longer clubs
20 in the plurality of clubs.

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23 13. The method of claim 10, wherein the correlating step includes locating the golf ball in
24 substantially the same position in the golfer's stance, with respect to the armpits of the golfer, for
25 increasingly longer clubs in the plurality of clubs.

26 Sub 937 14. The method of claim 9, wherein the tailoring step includes the step of substantially
27 matching the particular swing characteristic for each club within the plurality of clubs.
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1 15. The method of claim 14, wherein the swing characteristic to be matched is the relative
2 difference between the design loft and the effective loft for each club within the plurality of
3 clubs.

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5 16. The method of claim 15, wherein the relative difference between the design loft and the
6 effective loft for each club is intended to be approximately zero.

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8 *Sub a 47* 17. A method of designing a set of golf clubs to be used by a golfer, comprising the steps of:
9 determining a design loft for each club;
10 selecting at least one of a lie, a length and an offset for each club; and
11 tailoring a lean angle of each club to obtain a desired effective loft upon impact of each
12 club with a golf ball.

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14 18. The method of claim 17, wherein the tailored lean angle of each club is greater than 0 and
15 less than 15 degrees.

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17 19. The method of claim 18, wherein the tailored lean angle of each club is greater than 3 and
18 less than 10 degrees.

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20 20. A method of designing a golf club to be used a golfer, comprising the steps of:
21 determining a design loft and selecting at least one of a lie, a length and an offset for the
22 club, the club having a shaft joined to a club head at a hosel, and the club head defining a sole
23 and a club face adapted to strike a golf ball; and
24 tailoring a lean angle, when the club is oriented at the design loft, between (i) a
25 projection of the centerline of the shaft onto a vertical plane, the plane being along an intended
26 line of play and (ii) a vertical line in such vertical plane, the tailoring of the lean angle being
27 based upon at least one swing characteristic of the golfer.

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